



Rev 0  
01/22



# AETERNUM PAV

High efficacy reactive formulation for concretes and mortars with high durability specific for industrial concrete flooring



## DESCRIPTION

AETERNUM PAV is a new generation superfluidifying carboxylic additive in powder adsorbed on active nanomicrosilicates that combines, to the high pozzolanic activity of the latter, an extraordinary rheology and fluidity in the absence of segregation, a remarkable resistance to both mechanical compression and chemical and atmospheric aggressions and above all an extraordinary impermeability. Improves the face-view of the surface. Particularly designed for industrial concrete flooring.

There is also a formulation for summer climates: **AETERNUM PAV E**

There is also a formulation for winter climates: **AETERNUM PAV I**

## FEATURES

AETERNUM PAV consists of spherical particles a few hundredths of a micron size, so that its specific surface is very high: greater than 220,000 cm<sup>2</sup>/g (Blaine). Characteristic that gives it a high dispersion and reactivity on cement granules and a high ability to capture and fix calcium hydrate [Ca(OH)<sub>2</sub>] and transform it first into a hydrated silicate and then into stable and irreversible calcium silicate.

It must be said that in all mixtures containing cement, to obtain good workability, it is necessary to use a quantity of water always higher than that necessary for the hydration of the cement, this involves in the hardened cement paste the formation of capillaries and cavities the more numerous the greater the amount of water used.

Despite its very high specific surface AETERNUM PAV, having inside also a phase transfer, guarantees, without any use of additional superfluidifiers, easily and good workability concretes, without shrinkage and with superior and durable final performance. Given the chemical conformation of the AETERNUM PAV (which accelerates the hydration of cement), it is recommended for the summer season to make some initial qualifications. AETERNUM PAV added to the mixture at the rate of 2 – 4 % on the weight of the cement, captures and reacts with free lime, filling the voids present in the cement paste, this makes the conglomerate more compact, more waterproof and more resistant and consequently more durable over time and with better appearance. If well designed a concrete with AETERNUM PAV turns out to have total impermeability. This additive allows the packaging of rheoplastic concretes and rheodynamic SCCs with very low a/c ratios.

## HOW TO USE

AETERNUM PAV finds its main applications in all quality concretes and mortars, where homogeneous concretes are required, superfluids with a very low a/c ratio, with excellent face-to-face finishes, especially impermeable to external aggressive agents, with compensated shrinkage, of high resistance to bending and compression.

AETERNUM PAV is used in the preparation of:

- Industrial concrete flooring with high durability;
- High durability concrete ramps;
- mortars or concretes with high mechanical strength

SHEET



TEKNA CHEM S.p.A.

Factory: Renate (MB) - Via Sirtori, z.i. 20838 - Phone +39 0362.91.83.11

Web: [www.teknachemgroup.com](http://www.teknachemgroup.com) - E-mail: [info@teknachemgroup.com](mailto:info@teknachemgroup.com) - Fax: +39 0362.91.93.96



- mortars or waterproof concretes
- concretes for rampant formwork (slip-form);
- mortars or concretes for underwater applications especially in aggressive environments
- thixotropic mortars for restoration
- anti-shrinkage mortars, both pre-mixed and wet

However, on every occasion in which the mortar or concrete is required to perform superior performance, such as:

- mechanical resistance
- chemical resistance
- resistance to wear and cavitation
- impermeability
- stability and cohesion
- compensated withdrawal
- great face-view
- overall durability

It is also used to reduce the bleeding of concretes, in pumpable concretes and in concretes with high mechanical and durability characteristics.

AETERNUM PAV is also particularly recommended for concretes in which the particle size distribution has an evident lack of fine.

## PECULIARITY

AETERNUM PAV, despite the very small particle size:

- it does not require the simultaneous use of superfluidifiers indeed thanks to the same it is possible to have self-compacting concretes at very low dosages of water;
- gives concrete greater workability;
- facilitates pumping;
- guarantees high mechanical strength without plastic shrinkage;
- guarantees better face view and degree of finish;
- guarantees greater impermeability;
- guarantees durability and therefore resistance to all exposure classes.

## SPECIFICATIONS

	Dust physical state
	Silvery color
Particle size distribution	0-30 $\mu\text{m}$
Density in pile	400-600 $\text{g}/\text{dm}^3$
Solubility in	insoluble water
pH	$8 \pm 1$
Specific surface	20-30 $\text{m}^2/\text{g}$

## DOSAGE

The dosage of AETERNUM PAV is on average from 2 – 4 % on the weight of the cement depending on the mixture to be added and the desired characteristics.

However, it is recommended as an ideal dosage 3 – 3.5 % on the weight of the cement.

However, dosages other than those recommended after preventive guidance tests may be used.

## CONCRETE SEASONING

The reactions in the pozzolanic environment are quite long and take place in a humid environment; for this reason a correct seasoning of the mortar or concrete is required in order to avoid too rapid drying.

In this regard, it is advisable to protect the castings, during the first hardening phase, with polyethylene sheets and then apply a TEKCURING or TEKNAPUR film on the exposed surfaces, which will avoid a rapid evaporation of the jets, allowing a correct pozzolanic reaction to them.



## STORAGE AND CONSERVATION

AETERNUM PAV, if stored in a dry place and in the original perfectly closed bags, is valid for 12 months.

The moisture eventually adsorbed by the product does not affect its effectiveness, but makes its dosage difficult and inaccurate as well as a homogeneous distribution in the finished mixture. It is therefore advisable to close the bags carefully after each withdrawal.

AETERNUM PAV is available in bulk, in big-bags or bags.

The bulk product is transported with the classic torpedoes and can be stored in normal cement silos and dosed with the equipment of the batching plant or with a screw system for big-bags.

## PACKS

Big-bags of 500 - 600 kg

Variable conf bags from 9-10-11-12 kg

## WARNINGS

AETERNUM PAV is harmless on contact with the epidermis.

It is easily removed with soap and water from any surface.

By inhalation it can cause a slight irritation of the upper respiratory tract so the use of the dust mask is recommended.

In case of accidental loss, it must be collected in the dry state and disposed of in an authorized landfill.

## LEGAL

The information contained in this technical sheet, although representing the most advanced stage of knowledge, does not exempt the user from performing accurate preliminary tests in their conditions of use and operation. We therefore decline any responsibility for the improper use of the product.

**CE**  
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TEKNA CHEM SRL – via Sirtori z.i.  
20838 Renate (MB) – ITALY

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**AETERNUM**

High water reducer additive  
efficacy / superfluidifying T 3.1 / 3.2  
Max chloride content..... 0.1%  
Max content of alkalis..... 0.1%  
Absent hazardous substances